REMARKS

Claims 1, 2 and 4-8 are pending, with claim 1 being the sole independent claim. Claim 1 has been amended to clarify the components of the exhaust gas purifying catalyst by changing "comprises" to "consisting of". This amendment clearly distinguishes the claimed invention from the cited reference, U.S. Patent No. 5,756,057 to Tsuchitani et al. (hereinafter referred to as "Tsuchitani").

New claims 7 and 8 have been added to clarify that the present invention produces an exhaust gas purifying catalyst-supported member wherein the adhesion between the catalyst layer and the metal carrier is significantly enhanced and the peel ratio of the catalyst layer is significantly reduced compared with conventional catalyst layers; i.e., exhaust gas purifying catalyst support members which include a silicon dioxide undercoating and a catalyst layer that is substantially free from silicon dioxide. These conventional catalyst layers typically have a peel ratio of approximately 37.5% or greater whereas, in the present invention, the peel area of the catalyst layer is 1/5 to 1/10 less that the peel area of these conventional catalyst layers.

Support for these new claims is provided in the specification at page 14, line 6-23; page 17, lines 11+; page 19, line 20-page 20, line 9; and Table 1 on page 22.

No new matter has been added.

Response to Rejections

The present invention is directed to an exhaust gas purifying catalyst-supported member comprising a metal carrier and a catalyst layer directly formed on a surface of the metal carrier, wherein the catalyst layer comprises an exhaust gas purifying catalyst and silicon oxide, wherein the weight ratio between the exhaust gas purifying catalyst and silicon oxide in the catalyst layer is in the range of 10:90 to 40:60 and 20:80 to 40:60, and the exhaust gas purifying catalyst **consists of** at least one noble metal selected from the group consisting of platinum, palladium and rhodium and activated alumina. It has been found that the use of a specific catalyst layer which is directly formed on a surface of the metal carrier remarkably enhances the adhesion properties of the layer to the metal carrier without a substantial decrease of the catalytic activity of the catalyst layer, as is clear from the comparison between the Examples and Comparative Example 1 shown in Table 1.

As described on page 14, lines 6 to 23 of the specification, the peel area of the catalyst layer is decreased to 1/5 to 1/10 the peel area of the conventional catalyst layer.

The peel ratio of Example 1 was 5.0 wt%, while the peel ratio of Comparative Example 1 was 37.5 wt%. From this result, the quantity of the catalyst layer of Example 1 was decreased to about 1/7 that of Comparative Example 1. See page 19, line 20 to page 20, line 9 of the specification.

The peel strength of the present invention is the subject of new claims 7-8.

Claims 1, 2 and 4-5 are rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent Number 5,756,057 to Tsuchitani.

The Office Action asserts that Tsuchitani teaches each and every limitation of the claims. In particular, the Office Action asserts that Tsuchitani shows a metal carrier and a three-way catalyst slurry that may be directly formed on a surface of the metal carrier wherein the catalyst layer comprises an exhaust gas purifying catalyst and silicon oxide. The Office Action relies on col. 13, lines 5-20 of the references to assert that the weight ratio between the exhaust gas purifying catalyst and silicon oxide in the catalyst layer is in the range of 10:90 to 40:60, and the exhaust gas purifying catalyst in the catalyst layer comprises at least one noble metal selected from the group consisting of platinum, palladium and rhodium, and activated alumina.

Applicants respectfully traverse the rejection for the following reasons.

Claim 1 has been amended to require that the exhaust gas purifying catalyst in the catalyst layer **consists of at least one noble metal selected from the group consisting of platinum, palladium and rhodium, and activated alumina.**

Tsuchitani relates to a method for removal of nitrogen oxides from exhaust gas using a catalyst wherein the alkaline earth metals such as magnesium, calcium, strontium and barium or compounds thereof in the catalyst component are used as **essential components**. As described at column 8, lines 46-52, as the component for adsorbing the oxidized and activated NO_x, particularly NO_2, alkali metals such as lithium, sodium, potassium, rubidium and cesium or compounds thereof and/or alkaline earth metals such as magnesium, calcium, strontium and

barium or compounds thereof, particularly the compounds of alkali metals, are effectively used. In fact, the three-way catalyst (d) pointed out by the Examiner includes the alkaline earth metals.

From the disclosure of this reference, it is said that the catalyst system is a NO_x storage catalyst for lean-burn engine.

In contrast, the present invention is not a NO_x storage catalyst for lean-burn engine, but is a three-way catalyst operating under the stoichiometric fuel-air ratio. The three-way catalyst is used for purifying exhaust gas from internal combustion engines of automobiles of the like, wherein these gases include carbon monoxide, incomplete combustion hydrocarbon and nitrogen oxide (CO, HC and NO_x) which are purified at the same time and thus contain a noble metal.

The catalyst system of the present invention **does not include the alkaline earth metals as an essential component** because the use of the alkaline earth metals leads to lowering catalytic oxidation performance.

Thus, the present invention and the reference are completely different from each other in the catalyst system.

However, in order to more clearly define the present invention and distinguish from Tsuchitani, claim 1 has been amended to exclude the alkaline earth metal oxide, namely, the exhaust gas purifying catalyst **consists of** at least one noble metal selected from the group consisting of platinum, palladium and rhodium, and activated alumina.

As such, Tsuchitani fails to teach or suggest the amended claim 1 and, thus, the invention of the amended claims is novel over the teachings of Tsuchitani et al. As such, it is respectfully requested that the rejection of claims 1, 2 and 4-5 under 35 U.S.C. §102(b) be withdrawn as Tsuchitani fails to anticipate and/or render obvious the presently claimed invention.

Claim 6 is rejected under 35 U.S.C. §103(a) as being obvious over the teachings of Tsuchitani in view of United States Patent No. 4,759,918 to Homeier et al. (hereinafter referred to as "Homeier"). The Office Action relies on Homeier as teaching the use of metal mesh filters and asserts that it would have been obvious to use a metal mesh support member for solving the diesel emission problem.

For the reasons set forth above, amended claim 1 is different from the catalyst of Tsuchitani, therefore, even if the references, Tsuchitani et al. and Homeier et al., were combined in the manner suggested by the Examiner, the presently claimed invention cannot be obtained.

In view of the arguments set forth above and the amendment to claim 1, as well as the addition of new claims 7-8, it is respectfully requested that all claims in the application, namely claims 1, 2 and 3-8, be allowed and the application be passed to issue.

Respectfully submitted,

THE WEBB LAW FIRM

By Michele K. Yoder

Michele K. Yoder
Registration No. 41,562
Agent for Applicants
436 Seventh Avenue
700 Koppers Building
Pittsburgh, PA 15219
Telephone: (412) 471-8815
Facsimile: (412) 471-4094
E-mail: webblaw@webblaw.com